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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,753

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Alfredo Cardenas

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3196

7590

11/22/2004

Honeywell International, Inc.  
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EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/729,753

Applicant(s)

CARDENAS ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-12 and 18-20 is/are allowed.
- 6) ☒ Claim(s) 1,13-17 and 21-26 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on 04 December 2003 has been considered by the examiner.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 13-15 and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Laing (US 3,227,902). Laing teaches an apparatus for cooling a motor, comprising: a motor housing (outer casing) 38 with an upstream side and a downstream side (Fig.6); a shaft 31 disposed within the motor housing; a rotor (not numbered) on the shaft; an inlet hole 78 in the motor housing 38; an outlet hole (exit region) 74 in the motor housing 38 (Figs.6&7); the inlet hole 78 arranged in the same radial plane as the outlet hole 74 (Figs.6&7); and an air guide plate comprising partitions 39-42 and ducts 45/46 (Figs.6&7); the air guide plate formed to channel air from the inlet hole 78, over an outer surface of the shaft 31 (at the bottom of the motor), and radially outward through the outlet hole (Figs.6&7). Regarding claim 13, the impeller 35 and fins which direct air radially outward through outlet 74 can be considered part of the rotor since they are attached thereto (Figs.6-7). The guide plates formed by the partitions 39-42 and ducts 45/46 channel air radially inward through inlet 78, over the outer

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cylindrical surface of the shaft 31, into the rotor/impeller fins (not numbered) and then through outlet 74 (Fig.7). Regarding claims 14-15, all the inlet and outlet holes are in the same radial plane. Regarding claims 21-26, the impeller 35 accelerates the air radially outward through the outlet 74.

4. Claims 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki et al. (US 5,844,334). Sasaki teaches a traction motor apparatus and method for cooling including: providing a motor housing (bracket/frame) 1/7; providing a through inlet hole 20 in the motor housing (Fig.2); providing a through outlet hole 21 in the motor housing (Fig.2); and directing air radially inward through the through inlet hole, into the motor housing, and radially outward through the through outlet hole (c.3, lines 14-18; Fig.2); wherein the through inlet hole 20 and the through outlet hole 21 are in the same radial plane (line 23; Fig.2) and the radial plane is perpendicular to the axis of the motor housing (c.2, lines 58-63; Fig.2).

Regarding claim 22, note rotor 6 on shaft 5.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laing (US 3,227,902). Although Laing does not teach a shaft or impeller of aluminum, a well

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known heat conductor, it would have been obvious to provide this material since it has been held that choice of a preferred material involves ordinary skill. In re Leshin, 125 USPQ 416 (CCPA 1960).

7. Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 5,844,334) in view of Kummer et al. (US 5,315,193). Sasaki does not teach that the rotor accelerates air through the outlet hole.

Kummer teaches a motor including air inlet 14 and air outlet 16 through holes and further including a fan 5 attached to the motor rotor which increases the dynamic pressure, thereby accelerating the air and increasing air delivery and cooling through the machine (c.3, lines 7-11).

It would have been obvious to modify Sasaki and provide a fan per Kummer to increase air delivery through the machine.

Regarding claim 26, as seen in Figs.1&2 of Sasaki, air is directed over portions of the shaft 5.

8. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 5,844,334). Sasaki does not teach plural inlet and outlet through holes. However, this would have been obvious to one having ordinary skill in the art since it would merely involve duplication of elements for multiplied effect, i.e. enhancement of the cooling, which has been held to require only ordinary skill. St.Regis Paper Co. v. Bemis Co., Inc. 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

*Allowable Subject Matter*

9. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claim 2, the housings for bearings 60/61 in Laing appear to be upstream of the impeller 35.

10. Claims 4-7, 8-12 and 18-20 are allowed. Regarding claims 4 and 8, in Laing, the guide plate/s do not channel air from the inlet hole, over the outer surface of the shaft, and into the rotor. The air flow path is outside the rotor in Laing. Regarding claim 18, the prior art, in particular Laing, does not teach the claimed motor including, inter alia, “a bearing housing on the downstream side of the impeller” and “a bearing seal on the downstream side of the impeller”. The housings for bearings 60/61 in Laing appear to be upstream of the impeller 35.

*Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
15 November 2004